

*	EOP
	Waterkeeper commented on draft permit

Permit Number	Facility Name	SIC	County	City
Narrative Criteria Apply (No NNC)				
MT0000264	Cenex Harvest States Cooperative	2911	Yellowstone	Laurel
MT0030066	COLUMBIA FALLS ALUMINUM CO	3334	Flathead	Columbia Falls
MT0000396	CORETTE THERMAL PLANT	4911	Yellowstone	Billings
MT0024210	DECKER COAL CO (EAST MINE)		Big Horn	Decker
MT0000892	DECKER COAL CO (WEST MINE)		Big Horn	Decker
MT0028321	EXXON MOBIL BILLINGS REFINERY	2911	Yellowstone	Billings
MT0000477	EXXONMOBIL REFINING & SUPPLY	2911	Yellowstone	Billings

MT0031623	IOFINA NATURAL GAS WATER TREATMENT FACILITY	1311	Hill	Gildford,
MT0000094	JOHN R DAILY INC	2013	Missoula	Missoula
MT0000302	MDU - LEWIS & CLARK PLANT	4911	Richland	
MT0000388	MONTANA RAIL LINK -LIVINGSTON RAIL YARD	4011	andPark	Livingston
MT0021431	MT BEHAVIORAL HEALTH INC WWTP	8062	Deer Lodge	Galen
MT0030287	REVETT SILVER COMPANY - ROCK CREEK MINE	1021	Sanders	planning to install RO.
MT0000248	SIDNEY SUGARS INCORPORATED	2063	Richland	
MT0000485	TRIDENT PLANT	3241	Gallatin	Three Forks
TOTAL			15	
Nondischarging; CAFO or N/A				
MT0000884	BIG SKY COAL COMPANY - BIG SKY MINE	1221	Rosebud	Colstrip

MT0028983	BULL MOUNTAIN MINE #1	1221	Musselshell	
MT0031534	CATTLE DEVELOPMENT CENTER		Yellowstone	under 25 yr event.
MT0000256	Conoco Phillips Billings Refinery	291	Yellowstone	Billings
MT0030724	FIDELITY - TONGUE RIVER PROJECT WTF	1311	Big Horn	
MT0030741	HEADWATERS LIVESTOCK AUCTION		Broadwater	N/A: must retain runoff under 25 yr event.
MT0031593	JAMES GUERCIO - OW RANCH	1311	Big Horn	
MT0024619	SPRING CREEK MINE	1221	Big Horn	Decker

MT0023965	WESTERN ENERGY CO - ROSEBUD MINE	1221	Rosebud	Colstrip
MT0023604	WESTMORELAND SAVAGE CORP - SAVAGE MINE	1221	Richland	Savage
TOTAL			10	
Numeric Nutrient Criteria Apply - Known EOP.				
MT0030147	ASARCO INC	3339	Lewis and Clark	East Helena
MT0030031	ASARCO LLC - MIKE HORSE/ANACONDA MINE WATER TREATMENT SYSTEM	1021	Lewis and Clark	
MT0000451	ASH GROVE CEMENT COMPANY	1422	and Jefferson	see page...Draft Permit determined RP. General variance...
MT0027821	BEAVERHEAD TALC MINE	1499	Madison	
MT0023566	ELKHORN HEALTH CARE WWTP	8051	Jefferson	Alhambra
MT0000191	MONTANA RESOURCES		Silver Bow	Butte
MT0000230	MONTANA SULPHUR & CHEMICAL CO	2819	Yellowstone	Billings

MT0028428	MONTANA TUNNELS MINING INC	1099	Jefferson	
MT0030643	SLEEPING BUFFALO HOT SPRINGS - LAGOON		Phillips	Saco
MT0026808	STILLWATER MINING COMPANY	1099	Sweet Grass	Big Timber
MT0000281	WESTERN SUGAR COOPERATIVE	2063	Yellowstone	
MT0021229	WESTMORELAND RESOURCES INC - ABSALOKA MINE	1221	Big Horn	Hardin
MT0020460	YELLOWSTONE BOYS & GIRLS RANCH	7032	Yellowstone	Billings
TOTAL			13	
Numeric Nutrient Criteria Apply - RO Needed using Stillwater Example				
MT0030678	BARRETTS MINERALS - REGAL MINE	1099	Beaverhead	
MT0029891	BARRETTS MINERALS INC	1499	Beaverhead	Prime Meridian
MT0028584	LUZENAC AMERICA INC - YELLOWSTONE MINE	1499	Madison	
MT0030279	MONTANORE MINERALS CORP MONTANORE MINE	1021 and	Lincoln	pending verification from Maggie Pierce re. RO
MT0024716	STILLWATER MINING COMPANY	1021	Stillwater	Nye
TOTAL			5	
without site-specific analysis				
MT0000019	BN WHITEFISH FACILITY	4011	Flathead	Whitefish

MT0023639	BOULDER HOT SPRINGS WWTP		Jefferson	Boulder
MT0030015	M & W MILLING & REFINING INC	1041	Madison	
MT0030392	M&K OIL COMPANY - WRIGHT CREEK WATER DISPOSAL FACILITY	1311	Powder River	
MT0029980	MONTANA AVIATION RESEARCH CO	4941	Valley	
MT0030660	PINNACLE GAS RESOURCES - COAL CREEK DEVELOPMENT UNIT	1311	Big Horn	
MT0030350	REC ADVANCED SILICON MATERIALS LLC	3339	Silver Bow	Silver Bow listed for nutrients; WLA of 0. Abt report assumes RO.
MT0030252	TVX MINERAL HILL INC -TVX MINERAL HILL MINE	1041	Park	Gardiner
MT0031411	WOLF MOUNTAIN COAL	1221	Big Horn	
MT0030180	YELLOWSTONE ENERGY LIMITED PARTNERSHIP FACILITY	4911	Yellowstone	Billings
TOTAL			10	
Sum			53	

Receiving Water	Permit Date	Type of Facility	Effluent Stream
Yellowstone River	1999	Petroleum Refinery	Outfall 001 - Process Wastewater Cooling Tower Blowdown Collected Stormwater Runoff
Flathead River	1998	aluminum reduction plant	paste plant briquette cooling water, emissions scrubber water, cooling water from direct chill casting and sewage treatment plant effluent
Yellowstone River	1999	coal fired steam electric generating plant	Outfall 003 - Discharge from the bottom ash handling system, and miscellaneous low volume wastes from plant floor drains, furnace seal water evaporation blowdown, and storm water runoff not to include runoff from coal stock piles
Tongue River Reservoir	2006	surface coal mine	commingled storm water discharged from settling pond R-1
Tongue River Reservoir	2006	surface coal mine	associated areas and commingled storm water from pond #1 007 — treated pit water and commingled storm water discharged from settling pond #24; 008 — spoil pile runoff and storm water discharged from settling pond #25 010 — spoil pile runoff and storm water discharged from settling pond #26
Yellowstone River	2007	petroleum refining	001 Treated Wastewater
Yellowstone River	2009	petroleum refinery	001 — treated process wastewater from the refining process, 002 — noncontact cooling water

Fresno Reservoir	2009	drill and produce both natural gas and iodine.	
Clark Fork River	2007	Food Processing, meat processing	Contact Cooling Water Discharge
Yellowstone River	2000	coal fired steam electric generating plant	sump pump and screen Outfall 007 - Discharge from an ash disposal pond containing ash sluice water, evaporator and boiler blow down, floor drains, water treating sludge filter and softener rinse, metal cleaning wastes and storm water
Yellowstone River	2004	treatment plant (WWTP) that treats wastewater from two facilities. MRL operates it's own railroad engine overhaul and heavy maintenance facility and Talgo-LRC, LLC (formerly known as the Livingston Rebuild Center, Inc.) operates a locomotive engine rebuilding facility. The Galen WWTP serves the residents and employees of the non-profit 501 C-3 corporation Montana Behavioral Health, Inc. (MBH) Galen Campus.	001 — Discharge pipe at Yellowstone River
Clark Fork River	2007	underground copper and silver mine	001 — Continuous Discharge to Surface Water 003 - Storm water from the paste storage tailing ponds to Miller Creek 004 - Direct discharge to Rock Creek 005 (internal) - Domestic wastewater treatment system into the mine drainage wastewater treatment system (Internal Outfall 005). unnamed irrigation return channel Outfall 002 — Process water to Yellowstone River via shallow ground water Outfall 003 — Process water to unconfined shallow aquifer Land Application
Clark Fork River Outfall 002 — Ground water infiltration; Outfall 003 - Process Ponds — Ground water infiltration; and Outfall 004 — Land application.	1997	The applicant processes sugar beets to produce refined sugar. non-leaching wet process to manufacture cement.	002 Treated Wastewater
Missouri River	2009		
Hay Coulees (tributary to Rosebud Creek)	2008	surface coal mine	21 outfalls. All treated stormwater

Rehder Creek? Likely no nutrient sources. May not have RP for nutrients.	2008	underground coal mine (Bituminous and Lignite Coal Mining). No explosives. Long wall mine -- 1200' length.	001, 003, 006, 007, 008, 009 — Alkaline Mine Drainage 002, 004 — Coal Preparation Plants 005 — Western Alkaline Coal Mining
tributary to the WACO Custer Canal???			

Outfall 001 -
Process Wastewater
Collected Stormwater Runoff
Contaminated groundwater

Outfall 002 -
hydrostatic testing water (potable supply)

Yegen Drain (hooked up to Billings; N/A)

	2008	Petroleum Refinery	
Tongue River; see Abt report re. mixing zone and lack of RP	2010	coal bed natural gas - may not have RP for nutrients or may have mixing zone.	
Jefferson River	2004	concentrated animal feeding operation	Privately Owned Treatment Works - Minor
appears to have low treatment levels. May not have RP.		coal bed natural gas	
Spring Creek		surface coal mine; no discharge at this point.	001 - Overflow structure of Pond 1; Mine drainage 002 - Overflow structure of Pond 2; Commingled coal plant wash down, Mine drainage and pit water, and CBNG produced water 007 - Overflow structure of Pond 17; Mine drainage 012 - Overflow structure of Pond 39; Mine drainage

Rock Reservoir, Spring Creek, West Fork Armells Creek, Black Hank Creek, Donley Creek, Lee Coulee and Pony Creek. (assimilative capacity; small facility: stream listed for metals but no nutrients)	1999	surface coal mine; use ammonia nitrate. Commonly use water and use for dust control. No discharge.	Multiple
Peabody and Garden Coulees?? (L3; 0.576 mgd)	2008	surface coal mine; small facility (9 employees). Likely not to discharge or have RP for nutrients.	003 - Overflow from South Pond 2; Mine drainage 004 - Overflow from Tipple Pond; Mine drainage 005 - Overflow from South Pond 3; Coal plant wash down and mine drainage
Prickly Pear Creek* Blackfoot River (metals listing for creek; nutrient listing for Blackfoot River)*	2010	Abandoned lead smelter	001 — Process Wastewater, Privately-owned, Minor Facility
	2011	The Mike Horse and Anaconda Adits. Capped adits (mine drainage).	001A Mine drainage 003A Mine drainage
Prickly Pear Creek*	2010	non-leaching wet process to manufacture Portland cement.	002 Treated Wastewater and Storm Water 003 Regulated Storm Water
Middle Fork Stone Creek*	2006	former open-pit and underground talc mining operation undergoing post-closure reclamation stabilization	001 Mine Drainage
Prickly Pear Creek*	2009	WWTP serves the residents and employees of a privately-owned nursing home facility	001 — Minor, Private

Silver Bow Creek*
(WLA in Nutrient TMDL)

2000

Open pit copper molybdenum mine processed fuel gas to the refinery. Chemical products and gases are produced from the gas treatment process. The MSCC gas treatment process scrubs and de-sulfurizes fuel gases and processes hydrogen sulfide-containing gases into elemental sulfur (brimstone)

Outfall 004 - Tailings pond

Dry Creek - ? (flow of 3.5 MGD; assume EOP; Level 3?)

2007

Outfall 001 - Minor - privately owned treatment works with non-contact cooling water

Spring Creek*	2007	open pit metal mine and flotation mill (silver, gold, and base metals concentrate)	001 — Mine Drainage and Storm Water 002 — Mine Drainage
Beaver Creek* (TP listing)	2002		
East Boulder River* (chl)	2000		Outfall 1 is only surface water discharge
Yegen Drain (Flow 9.36 MGD; Level I; EOP)	2009	The applicant processes sugar beets to produce refined sugar. Note: If can seasonally retain, RO may not be required.	001 — Process Wastewater 002 — Process Wastewater and Cooling Water 004 — Process Wastewater
Sarpy Creek*	2003	use for dust control. No discharge.	012 Alkaline Mine Drainage
Canyon Creek	2004	and support for children, youth and their families	001 Treated Wastewater
0.144 mgd; L3??			
Left Fork Stone Creek (1.6 MGD; L3)?	2006	open-pit talc mine; use explosives	001 — Surface Water 002 — Surface Water
Johnny Gulch and Unnamed Irrigation Ditch	2009	open-pit talc mining and sorting operation; use explosives	001 — Surface Water and Mine Pit Water 002 — Surface Water 003 — Surface Water
Libby Creek	2006	The adit has been closed, flooded and site has undergone reclamation.	001 — Mine Drainage adit water 002 — Mine Drainage adit water 003 — Mine Drainage adit water
0.05 mgd; L4. and 0.65,mgd; L3 -- RO!!)			002 — Mine drainage to ground water
Nitrate listing..	2007	platinum and palladium mine	003 — Mine drainage to ground water

known without site-specific analysis

Whitefish River	2010	Assimilative Capacity? 0.096 low flow; Level 3
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Little Boulder River (assimilative capacity; small facility: stream listed for metals but not nutrients)	2009	privately-owned Boulder Hot Springs domestic wastewater treatment facility.
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001 - Discharge is from the
infiltration gallery.
002 - Discharge is from the
underdrain to an infiltration gallery
and then to groundwater

Alder Creek	1998	milling facility for precious and base metals.
Belle Creek (0.017 mgd; L3)??	1998	Oil production
East Fork Cherry Creek via Spring Coulee	2005	conventional potable water treatment plant
Tongue River	2004	

001-Process Water

001 (process wastewater)

Outfalls 001 and 002
to Sheep Gulch

Outfall 003 to Silver
Bow Creek

2010 Production of high purity
polycrystalline silicon

001 — Minor Private
002 - Storm Water (integrated)
003 - Minor Private

Bear Creek	2001	Abandoned underground precious metal mine	tailing storage
Monument Creek	2006	Bituminous Coal Screening Plant	of screening equipment; not from the physical washing of coal.)

water ditch; hooking
up to Billings?

2008 steam and electric generating
plant

Treatment System	Monitoring Notes (impt to nutrients)	Average Flow (s)
3-Pielkenroad separators 2 API oil-water separators DAF Aerated Sludge Digestion Clarification Sludge retention pond 2 aerated retention ponds	Routine monitoring for flow and ammonia Ammonia limits - Daily Max = 418 lb/d 30 d avg = 191 lb/d	1994-1998 data Mean annual high monthly average Flow = 0.797 MGD Mean annual average monthly flow = 0.697 MGD
percolation ponds	No Nutrients monitoring requirements	2.4 and 2 mgd. Total 4.4 mgd
	No Nutrients monitoring requirements	discharge which consists of an estimated 210 gpm from the Corette Plant bottom ash waste water, 1 gpm from plant floor drains, 10 gpm from the furnace seal water, 12 gpm from the evaporator blowdown and storm runoff from the plant site not to include storm runoff from coal stockpiles
	No Nutrients requirements	Average: 0.89 mgd
sedimentation ponds.		1.12 mgd
API separator, induced air floatation unit, a biological oxidation lagoon and three stabilization/polishing ponds		2352 gpm
institute approved (API) separator, induced air floatation (IAF) unit, a biological oxidation lagoon, and stabilization/polishing ponds		Treatment Plant: 1 mgd

RO		
		Max: 0.139 (mgd)
	No Nutrients monitoring requirements	42.34 mgd (majority is once-through cooling water). Ash pond discharge is 0.36 mgd
grit separation equalization tank oil skimming chemical coagulation flocculation dissolved air flotation multimedia filtration carbon adsorption.	No Nutrients monitoring requirements	0.0384 mgd
activated sludge mechanical facility		Design flow: 0.1 mgd

primary settling achieved by the clarifier and in the various factory site impoundments plant consisting of a combined aeration tank and clarifier.

Outfall 1: 164,253 gpd. Outfall 2: 143,996 gpd

0.007 mgd

sediment pond	No Nutrients monitoring requirements	0.33 mgd
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within the permitted area.

Treatment consists of

detention of process waters

and storm water to allow

suspended solids to settle out.

No Nutrients monitoring

requirements

175 gpm

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Outfall 001 -

*cross-plate separators (solids
and oil)

*DAF

*Activated sludge

*Aeration and equilization
tanks

*Bio-oxidation ponds

*holding and emergency
ponds

*stabilization/polishing ponds

Ambient monitoring of
Yegen Drain 2005-2007

Total N = 15.02 mg/L
(max)

total P = 0.48 mg/L (max)

Outfall 002 -

with potable water input no
treatment

Have supplemental
monitoring requirements
for TN and TP

Mean daily max = 0.70 mgd

Max daily max = 2.70 mgd

Mean 30 d average = 0.50 mgd

Max 30 d average = 0.75 mgd

Higgins

Loop Ion Exchange (IX)

technology

850 or 1700 gpm

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Higgins

Loop Ion Exchange (IX)

technology

0.52-5.43 mgd

Each outfall is associated with a sediment pond designed to contain the runoff from a 25- year, 24-hour rainfall event.	No Nutrients monitoring requirements	0.02 mgd (?)
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various sediment control facilities including ponds, traps and alternate sediment control installations

No Nutrients monitoring requirements

	No Nutrients monitoring requirements	The flow rate reported for this discharge was 0.576 MGD.
sedimentation, thickening, and filter pressing of sludge		55 gpm
constructed wetlands treatment system	No Nutrients monitoring requirements	32.5 gpm
Holding pond	No Nutrients monitoring requirements	Outfall 001: 0.043 mgd Outfall 002: 0.049 mgd Outfall 003: 0.08 mgd
Two sedimentation ponds		220,700 gpd
mechanically extended aeration activated sludge Cantex package plant with no disinfection		Design Flow, Average (mgd): 0.015

Tailing is slurried to a tailing impoundment. Lime is added at various points into the plant drainage culvert that drains to Dry Creek. In addition, as stated above, the solids content from water filters, softener regeneration wastewater and back flush water are discharged with non-contact cooling water.

Calculation are based on 5.04 mgd

1,439 gpm

Sedimentation ponds
lagoon system with no
disinfection, with discharge of
effluent to a wetland area that
flows into a constructed ditch
that flows into Beaver Creek.
through anoxic pretreatment
cells which remove nitrogen
compounds through biological
transformation.



Design flow: 0.0129 mgd

737 gpm

001 - two aerated treatment ponds.		The average flow contributed by the each outfall is listed on the renewal application as: 2.1 million gallons per day (mgd) at Outfall 001; 2.4 mgd at Outfall 002; and 0.04 mgd (48.4 gallons per minute) at Outfall 004.
alternate sediment control installations	No Nutrients monitoring requirements	

Three-cell facultative lagoon without disinfection.

Intermittent discharge. Design flow: 0.023 mgd

Pond

001: 666 gpm; 002: 236 gpm



No discharge from Outfall 001.
55 cfs

Drainfields

sedimentation, settling, reuse,
anaerobic biological
treatment, and discharge to
surface water.

		2000 gpm
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two-cell lagoon system		Design: 0.085 MGD. Average: 94 gpm
unlined impoundment	Nitrate/Nitrite as N permit limits are 1.0 for Outfall 001 and 10 fro outfall 002	
third settling/evaporation pond	No Nutrients monitoring requirements	11.67 gpm
	No Nutrients monitoring requirements	0.06 mgd. No discharge has been recorded
Equalization (EQ) basin, flocculation, clarification and neutralization. Treated wastewater mixes with cooling tower blowdown water prior to discharge.		0.8 mgd
	No Nutrients monitoring requirements	2 gpm
sedimentation pond.		is expected to occur only during storm events greater than the 25-year/ 24-hour event)
pH adjustment		70 gpm

Nitrogen Constituents	Phosphorus Constituents	Notes	Current Level
Ammonia Avg Daily Max = 12 lb/d Highest Daily Max = 66 lb/d Mean 30 d avg = 5 lb/d Highest 30 d avg = 30 lb/d			Level 1
TN: min: 1.71; Max: 2.04, Av: 1.87	TP: min: <0.01, max: 0.18, av: 0.1		Level 4
TN: min: 0.46, Max: 3.39, Ave: 2.01	TP: min >0.01, max: 0.23, ave: 0.07		Level 4
Total Ammonia, as N mg/L min: <0.1 max: 0.3 Av: <0.12 Nitrite, as N mg/L min: <0.05 max: 0.95 Av: <0.16 Nitrate as N mg/L min: 0.06 max: 8.34 Av: 5.65			Level 1
Total Nitrogen Effluent mg/L min: 18.5 Max: 18.5 Ave: 18.5	Total Phosphorous Effluent mg/L Min: 0.73 Max: 0.76 Ave: 0.75 2		Level 1

			Level 5
		Only NCCW effluent	

TN: Min: 7.05, Max: 39.9, ave: 23.06

TP: Min: 0.47, Max: 11.0, ave: 6.4

level 1

Draft permit for a proposed facility

No need to cost

TN (mg/l) - Min: 2.5; max: 19.1, ave: 7.4.

TP (mg/l) - min 0.2, max: 1.1, Ave: 0.5.

level 1

Level 2

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		CAFO	CAFO
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Effluent TN (2 samples) Avg = 12.04 mg/L Max = 13.02 mg/L	Effluent TP (2 samples) Avg = 3.98 mg/L Max = 4.96 mg/L		
Receiving water TN (X samples) Avg = 15.02 mg/L	Receiving water TP (X samples) Avg = 0.48 mg/L	Check DMR for additional data	Level 1

TN: 0.6			Level 4
		CAFO	CAFO

			Level 4

Ammonia as N: 1.52 mg/l	TP: 0.25 mg/l		Level 3
			Level 1
			Level 1
TN: Min: 1.09, Max: 84, ave: 16.3	TP: Min: 0.02, Max: 5.0, ave: 1.9		level 1

Median and mean concentrations for TN was approx. 2.0 mg/l

Level 4

Nitrate plus Nitrite as
Nitrogen. Average. Outfall
001: <0.05. Outfall 002: 0.33

level 5

Level 1

Proposed permit for a new
mine. level 3 (?)

level 3

001 - Total Ammonia as N
(mg/l) Min: 16; Max: 44; Ave:
33.3

level 1

TN: Min: 9.6, Max: 19, ave:
15.8

TP: Min: 2.45, Max: 5.43,
ave: 4.0

Level 1

001 TN: min 2.5; max 6.9; ave
4.21.

002: min 2.0; max 4.3; ave
3.09

Level 3

Averages: Nitrate + Nitrite, as
N 3.28; Ammonia, as N <0.01;
Total Organic Nitrogen, as N
0.7

Level 3

TN: min <0.07, max <1.95, av
<0.021

Level 5

Averages: TON: 0.2; Ammonia:
0.029; Nitrate-Nitrite: 0.074.

TP: Average 0.018

Level 4

Statement of Basis received
was for a permit modification
(outfall relocation)

TN: Min: 0.33, Max: 2.11, ave: 0.84

TP: Min: <0.05, Max: 0.21, ave: 0.10

Level 3

Level 1

proposed facility

Level 1

TN: min <0.1, max 2.6, ave: <0.7

TP: min 0.08, max: 0.4. av: 0.3

Level 3

		moving to non-discharging system.	No need to cost
			Level 1

Level 3

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MT0000892	DECKER COAL CO (WEST MINE)		Big Horn
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MT0000477	EXXONMOBIL REFINING & SUPPLY	2911	Yellowstone
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	IOFINA NATURAL GAS WATER		
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MT0030643	SLEEPING BUFFALO HOT SPRINGS - LAGOON		Phillips
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Sum	53		

City	Receiving Water	Permit Date
East Helena	Prickly Pear Creek*	2010
	Mike Horse Creek and Blackfoot River (metals listing for creek; nutrient listing for Blackfoot River)*	2011
	Prickly Pear Creek*	2010
	0.144 mgd; L3??	
Prime Meridian	Left Fork Stone Creek (1.6 MGD; L3)?	2006
Closed. But seepage...Draft Permit determined RP. General variance...	Middle Fork Stone Creek*	2006
Colstrip	Lee, Emile, Miller, and Hay Coulees (tributary to Rosebud Creek)	2008
Whitefish	Whitefish River	2010
Boulder	Little Boulder River (assimilative capacity; small facility: stream listed for metals but not nutrients)	2009
	Rehder Creek? Likely no nutrient sources. May not have RP for nutrients.	2008
N/A: must retain runoff under 25 yr event.	Unnamed ephemeral tributary to the WACO Custer Canal???	

Laurel Yellowstone River 1999

Columbia Falls Flathead River 1998

Billings Yegen Drain (hooked up to Billings; N/A) 2008

Billings	Yellowstone River	1999
Decker	Tongue River Reservoir	2006

Decker	Tongue River Reservoir	2006
Alhambra	Prickly Pear Creek*	2009

Billings	Yellowstone River	2007
Billings	Yellowstone River	2009
	Tongue River	2010

N/A: must retain runoff under 25 yr event.	Jefferson River	2004
Gildford,	Fresno Reservoir	2009
Missoula	Clark Fork River	2007
	Johnny Gulch and Unnamed Irrigation Ditch	2009
	Alder Creek	1998
	Belle Creek (0.017 mgd; L3)??	1998

Yellowstone River 2000

East Fork Cherry Creek via Spring Coulee 2005

Livingston Yellowstone River 2004

Butte Silver Bow Creek* (WLA in Nutrient TMDL) 2000

Billings	Dry Creek - ? (flow of 3.5 MGD; assume EOP; Level 3?)	2007

	Spring Creek*	2007
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Pending verification from
Maggie Pierce re. RO

Libby Creek 2006

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Galen

Clark Fork River 2007

Tongue River 2004

Silver Bow listed for
nutrients; WLA of 0

Outfalls 001 and 002 to Sheep Gulch
Outfall 003 to Silver Bow Creek 2010

planning to install RO.	Clark Fork River	1997

Outfall 001 — Yellowstone River;
Outfall 002 — Ground water infiltration;
Outfall 003 - Process Ponds — Ground
water infiltration; and
Outfall 004 — Land application.

Saco

Beaver Creek* (TP listing) 2002

Decker

Spring Creek

Big Timber

East Boulder River* (chl) 2000

Nye

Stillwater River (0.94 mgd; L4. and
0.65,mgd; L3 -- RO!!) Nitrate listing.. 2007

Three Forks	Missouri River	2009
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Gardiner	Bear Creek	2001
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Colstrip	Stocker Creek, Hay Coulee, South Fork Cow Creek, Cow Creek, East Fork Armells Creek, Castle Rock Reservoir, Spring Creek, West Fork Armells Creek, Black Hank Creek, Donley Creek, Lee Coulee and Pony Creek. (assimilative capacity; small facility: stream listed for metals but no nutrients)	1999
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	Yegen Drain (Flow 9.36 MGD; Level I; EOP)	2009
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Hardin	Sarpy Creek*	2003
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Savage	Peabody and Garden Coulees?? (L3; 0.576 mgd)	2008
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	Monument Creek	2006
Billings	Canyon Creek	2004

Billings	ExxonMobil storm water ditch; hooking up to Billings?	2008
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Type of Facility
Abandoned lead smelter
The Mike Horse and Anaconda Adits. Capped adits (mine drainage).
non-leaching wet process to manufacture Portland cement.
open-pit talc mine; use explosives
former open-pit and underground talc mining operation undergoing post-closure reclamation stabilization
surface coal mine
Assimilative Capacity? 0.096 low flow; Level 3
privately-owned Boulder Hot Springs domestic wastewater treatment facility.
underground coal mine (Bituminous and Lignite Coal Mining). No explosives. Long wall mine -- 1200' length.

Petroleum Refinery

aluminum reduction plant

Petroleum Refinery

coal fired steam electric generating plant

surface coal mine

surface coal mine

WWTP serves the residents and employees of a privately-owned nursing home facility

petroleum refining

petroleum refinery

coal bed natural gas

concentrated animal feeding operation

drill and produce both natural gas and iodine.

coal bed natural gas

Food Processing, meat processing

open-pit talc mining and sorting operation; use explosives

milling facility for precious and base metals.

Oil production

coal fired steam electric generating plant

conventional potable water treatment plant

MRL operates a wastewater treatment plant (WWTP) that treats wastewater from two facilities. MRL operates it's own railroad engine overhaul and heavy maintenance facility and Talgo-LRC, LLC (formerly known as the Livingston Rebuild Center, Inc.) operates a locomotive engine rebuilding facility.

Open pit copper molybdenum mine

MSCC processes refinery "acid gas" and "sour fuel gas" from ExxonMobil and returns processed fuel gas to the refinery. Chemical products and gases are produced from the gas treatment process. The MSCC gas treatment process scrubs and de-sulfurizes fuel gases and processes hydrogen sulfide-containing gases into elemental sulfur (brimstone)

open pit metal mine and flotation mill (silver, gold, and base metals concentrate)

The adit has been closed, flooded and site has undergone reclamation.

The Galen WWTP serves the residents and employees of the non-profit 501 C-3 corporation Montana Behavioral Health, Inc. (MBH) Galen Campus.

Production of high purity polycrystalline silicon

underground copper and silver mine

The applicant processes sugar beets to produce refined sugar.

surface coal mine; no discharge at this point.

platinum and palladium mine

non-leaching wet process to manufacture cement.

Abandoned underground precious metal mine

surface coal mine; use ammonia nitrate. Commonly use water and use for dust control. No discharge.

The applicant processes sugar beets to produce refined sugar.

surface coal mine; use ammonia nitrate. Commonly use water and use for dust control. No discharge.

surface coal mine; small facility (9 employees). Likely not to discharge or have RP for nutrients.

Bituminous Coal Screening Plant
psychiatric and other treatment and support for children, youth and their families

steam and electric generating plant

Effluent Stream
001 — Process Wastewater, Privately-owned, Minor Facility
001A Mine drainage 003A Mine drainage
001 Treated Wastewater and Storm Water 002 Treated Wastewater and Storm Water 003 Regulated Storm Water
001 — Surface Water 002 — Surface Water
001 Mine Drainage
21 outfalls. All treated stormwater
001, 003, 006, 007, 008, 009 — Alkaline Mine Drainage 002, 004 — Coal Preparation Plants 005 — Western Alkaline Coal Mining

Outfall 001 -
Process Wastewater
Cooling Tower Blowdown
Collected Stormwater Runoff

paste plant briquette cooling water, emissions scrubber water, cooling water from direct chill casting and sewage treatment plant effluent

Outfall 001 -
Process Wastewater
Collected Stormwater Runoff
Contaminated groundwater

Outfall 002 -
hydrostatic testing water (potable supply)

Outfall 002 - once-through cooling water

Outfall 003 - Discharge from the bottom ash handling system, and
miscellaneous low volume wastes from plant floor drains, furnace seal
water evaporation blowdown, and storm water runoff not to include
runoff from coal stock piles

002 — treated pit water and commingled storm water discharged from
settling pond R-1

001 — treated pit water and commingled storm water discharged from
pond #4;

005- treated coal preparation plant associated areas and commingled
storm water from pond #1

007 — treated pit water and commingled storm water discharged from
settling pond #24;

008 — spoil pile runoff and storm water discharged from settling pond #25

010 — spoil pile runoff and storm water discharged from settling pond #26

001 — Minor, Private

001 Treated Wastewater

001 — treated process wastewater from the refining process,
002 — noncontact cooling water

Privately Owned Treatment Works - Minor

Outfall 001 - Minor Industriail Non-Contact Cooling Water Discharge
001 — Surface Water and Mine Pit Water 002 — Surface Water 003 — Surface Water
001 - Discharge is from the infiltration gallery. 002 - Discharge is from the underdrain to an infiltration gallery and then to groundwater

Outfalls 002 and 004 - once-through non-contact cooling water (002 winter, 004 summer)

Outfall 003 - wash water from sand sump pump and screen

Outfall 007 - Discharge from an ash disposal pond containing ash sluice water, evaporator and boiler blow down, floor drains, water treating sludge filter and softener rinse, metal cleaning wastes and storm water

001-Process Water

001 — Discharge pipe at Yellowstone River

Outfall 004 - Tailings pond

Outfall 001 - Minor - privately owned treatment works with non-contact cooling water

001 — Mine Drainage and Storm Water
002 — Mine Drainage

001 — Mine Drainage adit water
002 — Mine Drainage adit water
003 — Mine Drainage adit water

001 — Continuous Discharge to Surface Water

001 (process wastewater)

001 — Minor Private
002 - Storm Water (integrated)
003 - Minor Private

001 - Direct discharge to the Clark Fork River,
002 - Seepage discharge to ground water hydraulically
connected to Clark Fork River from the tailing facility
003 - Storm water from the paste storage tailing ponds to
Miller Creek
004 - Direct discharge to Rock Creek
005 (internal) - Domestic wastewater treatment system into the
mine drainage wastewater treatment system (Internal
Outfall 005).

Outfall 001 — Process water to unnamed irrigation return channel
Outfall 002 — Process water to Yellowstone River via shallow ground
water
Outfall 003 — Process water to unconfined shallow aquifer Land
Application

001 - Overflow structure of Pond 1; Mine drainage
002 - Overflow structure of Pond 2; Commingled coal plant wash down,
Mine drainage and pit water, and CBNG produced water
007 - Overflow structure of Pond 17; Mine drainage
012 - Overflow structure of Pond 39; Mine drainage

Outfall 1 is only surface water discharge

001 — Mine discharge direct to Stillwater River
002 — Mine drainage to ground water
003 — Mine drainage to ground water

002 Treated Wastewater

tailing storage

Multiple

001 — Process Wastewater

002 — Process Wastewater and Cooling Water

004 — Process Wastewater

012 Alkaline Mine Drainage

001 - Overflow from North Pond 2; Mine drainage

002 - Overflow from South Pond 1; Mine drainage

003 - Overflow from South Pond 2; Mine drainage

004 - Overflow from Tipple Pond; Mine drainage

005 - Overflow from South Pond 3; Coal plant wash down and mine drainage

001, Process wastewater (washdown of screening equipment; not from the physical washing of coal.)

001 Treated Wastewater

Treatment System	Monitoring Notes (impt to nutrients)
pH adjustment, sedimentation, thickening, and filter pressing of sludge	
constructed wetlands treatment system	No Nutrients monitoring requirements
Holding pond	No Nutrients monitoring requirements
Pond	
Two sedimentation ponds	
sediment pond	No Nutrients monitoring requirements
two-cell lagoon system	
nine storm water detention ponds to treat waste and storm water runoff from within the permitted area. Treatment consists of detention of process waters and storm water to allow suspended solids to settle out.	No Nutrients monitoring requirements
3-Pielkenroad separators 2 API oil-water separators DAF Aerated Sludge Digestion Clarification Sludge retention pond 2 aerated retention ponds	Routine monitoring for flow and ammonia Ammonia limits - Daily Max = 418 lb/d 30 d avg = 191 lb/d
percolation ponds	No Nutrients monitoring requirements

Outfall 001 -

*cross-plate separators (solids and oil)

*DAF

*Activated sludge

*Aeration and equilization tanks

*Bio-oxidation ponds

*holding and emergency ponds

*stabilization/polishing ponds

Ambient monitoring of Yegen
Drain 2005-2007

Total N = 15.02 mg/L (max)

total P = 0.48 mg/L (max)

Outfall 002 -

with potable water input no treatment

Have supplemental monitoring
requirements for TN and TP

No Nutrients monitoring
requirements

	No Nutrients requirements
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sedimentation ponds.

Continuous discharge, mechanical, extended aeration activated sludge Cantex package plant with no disinfection	
API separator, induced air floatation unit, a biological oxidation lagoon and three stabilization/polishing ponds	
The Wastewater Treatment Plant (Outfall 001) consists of an American Petroleum Instituteapproved (API) separator, induced air flotation (IAF) unit, a biological oxidation lagoon, and stabilization/polishing ponds	
Higgins Loop Ion Exchange (IX) technology	

RO	
Higgins Loop Ion Exchange (IX) technology	
unlined impoundment	Nitrate/Nitrite as N permit limits are 1.0 for Outfall 001 and 10 fro outfall 002
	No Nutrients monitoring requirements

two unlined settling/evaporation ponds, each of which discharges to a third settling/evaporation pond	No Nutrients monitoring requirements
grit separation equalization tank oil skimming chemical coagulation flocculation dissolved air flotation multimedia filtration carbon adsorption.	No Nutrients monitoring requirements

Tailing is sluried to a tailing impoundment. Lime is added.

After non-contact cooling water is used, it is discharged at various points into the plant drainage culvert that drains to Dry Creek. In addition, as stated above, the solids content from water filters, softener regeneration wastewater and back flush water are discharged with non-contact cooling water.	
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Sedimentation ponds

Drainfields

activated sludge mechanical facility

Equalization (EQ) basin, flocculation, clarification and neutralization. Treated wastewater mixes with cooling tower blowdown water prior to discharge.

primary settling achieved by the clarifier and in the various factory site impoundments

1-acre, single-cell facultative lagoon system with no disinfection, with discharge of effluent to a wetland area that flows into a constructed ditch that flows into Beaver Creek.

Each outfall is associated with a sediment pond designed to No Nutrients monitoring contain the runoff from a 25-year, 24-hour rainfall event. requirements

The adit water will pass through anoxic biotreatment cells which remove nitrogen compounds through biological transformation.

coagulation, flocculation, settling, reuse, anaerobic biological treatment, and discharge to surface water.

extended aeration package plant consisting of a combined
aeration tank and clarifier.

No Nutrients monitoring
requirements

various sediment control facilities including ponds, traps
and alternate sediment control installations

No Nutrients monitoring
requirements

001 - two aerated treatment ponds. sediment control facilities including ponds, traps and alternate sediment control installations	No Nutrients monitoring requirements
	No Nutrients monitoring requirements
sedimentation pond.	
Three-cell facultative lagoon without disinfection.	

pH adjustment

Average Flow (s)	Nitrogen Constituents
55 gpm	Ammonia as N: 1.52 mg/l
32.5 gpm	
Outfall 001: 0.043 mgd Outfall 002: 0.049 mgd Outfall 003: 0.08 mgd	
001: 666 gpm; 002: 236 gpm	001 TN: min 2.5; max 6.9; ave 4.21. 002: min 2.0; max 4.3; ave 3.09
220,700 gpd	
0.33 mgd	
Design: 0.085 MGD. Average: 94 gpm	TN: Min: 0.33, Max: 2.11, ave: 0.84
175 gpm	

1994-1998 data
Mean annual high monthly average Flow = 0.797 MGD

Mean annual average monthly flow = 0.697 MGD

Ammonia
Avg Daily Max = 12 lb/d
Highest Daily Max = 66 lb/d
Mean 30 d avg = 5 lb/d
Highest 30 d avg = 30 lb/d

2.4 and 2 mgd. Total 4.4 mgd

Effluent TN (2 samples)
 Avg = 12.04 mg/L
 Max = 13.02 mg/L

Mean daily max = 0.70 mgd
 Max daily max = 2.70 mgd
 Mean 30 d average = 0.50 mgd
 Max 30 d average = 0.75 mgd

Receiving water TN (X
 samples)
 Avg = 15.02 mg/L

Outfalls 002 is a discharge of condenser cooling water with an estimated flow of 50 MGD and a maximum flow of 131 MGD. Outfall 003 is a discharge which consists of an estimated 210 gpm from the Corette Plant bottom ash waste water, 1 gpm from plant floor drains, 10 gpm from the furnace seal water, 12 gpm from the evaporator blowdown and storm runoff from the plant site not to include storm runoff from coal stockpiles

Average: 0.89 mgd	TN: min: 1.71; Max: 2.04, Av: 1.87
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1.12 mgd

TN: min: 0.46, Max: 3.39, Ave: 2.01

Design Flow, Average (mgd): 0.015	TN: Min: 1.09, Max: 84, ave: 16.3
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2352 gpm

Total Ammonia, as N mg/L
 min: <0.1 max: 0.3 Av: <0.12
 Nitrite, as N mg/L min: <0.05
 max: 0.95 Av: <0.16
 Nitrate as N mg/L min: 0.06
 max: 8.34 Av: 5.65

Treatment Plant: 1 mgd	Total Nitrogen Effluent mg/L min: 18.5 Max: 18.5 Ave: 18.5
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850 or 1700 gpm	TN: 0.6
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0.52-5.43 mgd	
3-day Average: 0.0619. Daily Min: 0.045. Daily Max: 0.139 (mgd)	
No discharge from Outfall 001. 55 cfs	Averages: Nitrate + Nitrite, as N 3.28; Ammonia, as N <0.01; Total Organic Nitrogen, as N 0.7
11.67 gpm	

42.34 mgd (majority is once-through cooling water). Ash pond discharge is 0.36 mgd

0.06 mgd. No discharge has been recorded

0.0384 mgd

Calculation are based on 5.04 mgd

Median and mean concentrations for TN was approx. 2.0 mg/l

1,439 gpm	

	Nitrate plus Nitrite as Nitrogen. Average. Outfall 001: <0.05. Outfall 002: 0.33
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TN: min <0.07, max <1.95, av <0.021

Design flow: 0.1 mgd

TN: Min: 7.05, Max: 39.9, ave: 23.06

0.8 mgd

TN: min <0.1, max 2.6, ave: <0.7

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Outfall 1: 164,253 gpd. Outfall 2: 143,996 gpd

Design flow: 0.0129 mgd

0.02 mgd (?)

737 gpm

2000 gpm

Averages: TON: 0.2; Ammonia: 0.029; Nitrate-Nitrite: 0.074.

0.007 mgd

TN (mg/l) - Min: 2.5; max:
19.1, ave: 7.4.

2 gpm

The average flow contributed by
the each outfall is listed on the renewal application as: 2.1 million gallons per
day (mgd) at
Outfall 001; 2.4 mgd at Outfall 002; and 0.04 mgd (48.4 gallons per minute) at
Outfall 004.

001 - Total Ammonia as N
(mg/l) Min: 16; Max: 44; Ave:
33.3

The flow rate reported for this discharge was 0.576 MGD.

4800 gpd (Effluent discharged to surface waters is expected to occur only during storm events greater than the 25-year/ 24-hour event)	
Intermittent discharge. Design flow: 0.023 mgd	TN: Min: 9.6, Max: 19, ave: 15.8

70 gpm

Phosphorus Constituents	Notes	Current Level
TP: 0.25 mg/l		Level 3
		Level 1
		Level 3
		Level 1
	Statement of Basis received was for a permit modification (outfall relocation)	
TP: Min: <0.05, Max: 0.21, ave: 0.10		Level 3
	CAFO	CAFO

Level 1

Effluent TP (2 samples)

Avg = 3.98 mg/L

Max = 4.96 mg/L

Receiving water TP (X
samples)

Avg = 0.48 mg/L

Check DMR for additional
data

Level 1

TP: min: <0.01, max: 0.18, av: 0.1	
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Level 4

TP: min >0.01, max: 0.23,
ave: 0.07

Level 4

TP: Min: 0.02, Max: 5.0, ave: 1.9	
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level 1

Level 1

Total Phosphorous Effluent mg/L Min: 0.73 Max: 0.76 Ave: 0.75 2	

Level 1

Level 4

	CAFO	CAFO
		Level 5
		Level 4
	Only NCCW effluent	
		Level 3
		Level 1

		Level 4

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level 5

Level 5

TP: Min: 0.47, Max: 11.0,
ave: 6.4

level 1

proposed facility

Level 1

TP: min 0.08, max: 0.4. av:
0.3

Level 3

	Draft permit for a proposed facility
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No need to
cost

level 1

Level 1

Proposed permit for a new
mine. level 3 (?)

level 3

TP: Average 0.018

Level 4

TP (mg/l) - min 0.2, max: 1.1,
Ave: 0.5.

moving to non-discharging
system.

Level 2
No need to
cost

level 1

		Level 1
TP: Min: 2.45, Max: 5.43, ave: 4.0		Level 1

Level 3